60 - Installing Interior Doors

Tools and Materials Needed:

1. Finish nail guns filled with 2 inch finish nails
2. Wood shims, ¾ and ½ plywood scraps.
3. Pre-hung doors
4. 356 casing
5. 2 ft level
6. 6 ft level

Most Common Mistakes:

1. Door does not close uniformly snug to the stop
2. Door binds on hinge and doesn't easily close or open.
3. Door doesn't stay open or doesn't stay closed. When you release your hand it swings one way or the other on its own
4. Door frame is not flush to the drywall on both sides of the wall, at top and bottom

Roles:

1. One person checks plumb and reveal while another person adjusts shims and drives nails.

Door Installation:

There are 2 distinct ways to hang doors. Either of these methods, if done correctly results in the door being set plumb, square, with an even reveal, and properly shimmed to ensure that the door jamb cannot be moved. But also, both of these methods can result in crooked doors that don't close if done incorrectly. Always have another person, whether it is a construction crew lead or the site supervisor, check all the doors before finishing the last of the trim and effectively closing up the door.

Method 1:

1. Distribute the doors to each place in the house. Insure you have the right size door, have it positioned for proper swing into or out of the room and left/right hand swing. Interchange doors until all are in proper locations.
2. For each door;
    1. Verify the height and width of the rough opening is sufficient for the door frame. Enlarging the rough opening will require help from an expert.
    2. Verify that the door rough opening is acceptably square by ensuring the two sides are plumb and the rough opening is consistent. Minor out of square will be handled by shims.
    3. Verify the wall is plumb on either end of the opening, if the wall is not plumb you will have to adjust the door to ensure the door touches the stop evenly.
    4. Verify the wall is flat on either side of the opening. Do this by running a 6 ft level left to right across the opening, near the top and near the bottom. Rarely, the wall framing gets twisted. This will require help from an expert to make the door operate correctly.
    5. Plumb the hinge side of the rough opening. If it is not plumb, tack on shims using finish nails to make it plumb. If the door opening is excessively wide, you may have to have extra shims or other lumber on the hinge side to center the door in the opening so that the door

trim covers on both side.

6. Remove any shipping blocks, latch alignment plugs and related stuff from the pre-hung door assembly.
7. Insert the pre-hung door into the opening and snug it to the framing (with shims per step 4) on the hinge side. The door jamb must be flush to the drywall on both sides of the door. Attach it with a few finish nails.
8. Close the door and inspect the reveals and alignment. This includes:
    1. Uniform alignment from the stop, top to bottom on the latch side and top.
    2. Consistent small space between the door and the jamb
    3. On the latch side.

   Adjust the door jamb up/down left and right to make proper reveals and alignment. Insert shims to firm these adjustments. Nail through the shims on the latch side in a couple places.
9. Operate the door to verify smooth operation. It should just barely clear the door jamb when opened and closed. When you open the door part way and release it, it should stand still, neither falling closed or falling open. If it fails any of these tests, analyze why, pull nails and go back to step 6 to further improve the fit.
10. When you are satisfied with fit and operation, fully nail both sides. Shim and nail the top. Cut off the shims flush to the door frame.

Method 2:

1. Begin by installing the casing on the hinge side of the door.

    1. Lay a door on a pair of sawhorses with the hinges up.
    2. Using a tape measure and square or a reveal block mark the 3/16th reveal in the top corners, the middle of the jamb on both sides and top and the bottom of the sides.
    3. Measure the distance from the bottom of the side jamb to the reveal along the top, this is the length of the first piece of trim to the shorter side of the 45% angle at the top. Verify the measurement is the same on both sides.
    4. Mark the casing and then using a speed square draw a 45 degree angle going up from your mark.
    5. Using the miter saw cut along the line you drew with your speed square.
    6. Repeat for the opposite side.
    7. Measure the top of the jamb between the 2 3/16th marks on either side of the door.
    8. Mark the 45 degree angle on one side of a piece of casing trim. Pull the tape measure from the short part of that angle and mark the other side of the trim. Using the speed square draw the 45 going away from the 2nd mark. Cut both sides.
    9. Using the finish stapler start by nailing the trim onto the sides of the jamb starting at the bottom keeping your trim flush with the bottom of the jamb (after the first nail check that the angle is in the right place at the top) and working your way to the middle. Put a nail every 18 inches but do not pass the middle of the jamb. Repeat this process on the opposite side.
    10. Mark the center of the top piece of the jamb. Mark the center of the piece of trim meant for the top of the jamb. Place the piece on the door lining up the center marks. Once the piece is centered use the finish stapler to secure the trim with a nail in the center of the

trim.

11. Carefully align the top piece of trim with the side piece of trim ensuring that the angle matches up and the profile of the two pieces match as well. Staple both pieces of trim to the jamb in the corner holding the pieces in alignment. Repeat on the opposite side and fill in the staples everywhere else so that the trim is nailed every 18 inch.
12. Repeat with remaining doors.

3. Distribute the doors to each place in the house. Insure you have the right size door; have it positioned for proper swing into or out of the room and left/right hand swing. Interchange doors until all are in proper locations.
4. For each door;
    1. Verify the height and width of the rough opening is sufficient for the door frame. Enlarging the rough opening will require help from an expert.
    2. Verify that the door rough opening is acceptably square by ensuring the two sides are plumb and the rough opening is consistent. Minor out of square will be handled by shims.
    3. Verify the wall is plumb on either end of the opening, if the wall is not plumb you will have to adjust the door to ensure the door touches the stop evenly.
    4. Verify the wall is flat on either side of the opening. Do this by running a 6 ft. level left to right across the opening, near the top and near the bottom. Rarely, the wall framing gets twisted. This will require help from an expert to make the door operate correctly.
    5. Remove any shipping blocks, latch alignment plugs and related stuff from the pre-hung door assembly.
5. Insert the door into the opening. With the door in the opening look along the top of the door and make sure the reveal between the door slab and the door jamb is even along the top. Pushing the top corner away from the door will make the opposite side of the reveal get smaller and pushing it towards the door will make the reveal get bigger. Additionally if you do not have room to move the top corner moving the bottom corner will do exactly the opposite. Once the reveal is even use a 16 gauge finish nailer and nail the top corner of the trim above the hinges to the wall. Put one nail in the top piece and one nail in the side piece. If the reveal across the top is even, the floor is level, and the door is built correctly the hinge side should sit on the floor and be level. Verify this is true using a 6ft level. If the hinge side is not level assume that the reveal is more important and check with your site supervisor.
6. If all is well, the reveal across the top is even and the hinge side is level shoot finish nails every 18 inches securing the hinge side trim to the wall. Finish nailing the top trim to the wall making sure the reveal is still even across the top. Sometimes the door will sag in the middle in which case push the bottom of the jamb up using shim between the door and the jamb and nail the trim into the wall.
7. Move to the non-hinge side of the door and start at the top of the door. Work your way from the top to the bottom nailing the trim so that you maintain an even reveal between the door and the jamb.
8. Work to door to ensure that it opens and shuts correctly and hits the stop evenly and has no hinge bind.
    1. If the door does not hit the jamb evenly use a small pry bar to pull the trim and the jamb away from wall to adjust where the door hits the jamb.
    2. If the door has hinge bind and will not shut all the way then the jamb is not square with the

rough framing adjust as necessary from the un trimmed side.

9. On the untrimmed side use shims to ensure that the door cannot be moved after completion. Since the trim is on one side already you must insert the shims vertically. To keep from needing excessive shims use ½ and ¾ plywood scraps where applicable. Insert shims vertically to fill the remaining space. Shims should go on both ends so the jamb cannot be moved from the hinge or the non-hinge side. Once you are satisfied that the shim is sufficiently filling the space, but not pushing the door towards the opposite side and thus affecting the reveal nail through the jamb into the shim and finally into the wall securing the shim in place for the life of the door.

Bypass and Bifold doors openings

1. For bypass and bifold doors you must first build a cased opening to house the doors. This can prove difficult as the doors are not pre-hung. Because of this you must be even more deliberate in installing the jamb and the trim.
2. Verify the size of the doors. A 5-0 bypass door has a rough opening of 62 inches wide and 2 30 inch doors. A 2-8 bifold door will have a rough opening of 34 inches. The rough opening height of both doors is consistent with the rough opening height of typical pre-hung doors.
3. Measure the width of the rough opening with the drywall. Typically it will be 4 ½ inch as it will be a 2x4 wall but sometimes the opening could be in a 2x6 wall or some faulty framing may have occurred in which case the jamb width will have to modified to fit.
4. Rip 1x6 trim boards on the table saw to the jamb width.
5. For cutting the length you want to ensure that the trim is even with the typical pre-hung doors. If the side pieces are cut all the way to the top the trim will be higher than the typical pre-hung door and will look out of place. Using a level mark the drywall at the door opening so that the mark is even and level with the closest pre-hung door. Measure up from the floor to the mark and this will be the length that you will cut the two sides.
6. For the top you need to take the width of the doors into account. For bypass doors you want the opening to 1 inch smaller than the combined width of both doors. For HFHSVV typical bypass doors this width is a 59 inch opening. However for your cut you have to add 1 ½ inch to that number to account for the material on either side. The top cut should typically be 60 ½ inches. For bifold doors the opening should be ½ inch wider than the bifold door when it is fully opened. Again add 1 ½ inches to account for the material on the sides.
7. Bring your cut pieces into the house and using a 16 gauge finish nailer attach the top piece to the sides nailing through the top piece. Be careful to nail straight without any angle lest the nail come out of the side piece and into the opening. In which case remove the nails. You have now created a jamb.
8. From this point you can attach your jamb in the opening using either method above. However you must be that much more diligent to ensure everything is straight plumb and square. Pay special attention to the top of the bypass door as the longer length increases the likely hood that the top will sag. Use a 6 ft level to ensure the proper straightness of the door.
9. Before starting (method 1) or finishing (method 2) the trim hang the doors by attaching the upper track to the jamb centered on the top piece of the jamb with provided screws. For the bifold door also attach the lower bracket also in the middle of the jamb and ½ inch lower that the height of the door. Then using the provided hardware, hang both doors and ensure that the doors operate correctly. They should hit both sides of the jamb equally and when closed should

match each other. Adjust as needed using the same techniques as you did to adjust pre-hung doors.

Safety

57	Lifting	lift too much, lift with back instead of knees, cause back strain	Site supervisor brief team to be cautious
44	Struck By	Nail gun	Safety Glasses Required All guns must be in single shot mode. No bump fire guns Air hose must be disconnected during any servicing, unjamming, etc Never shoot toward yourself or anyone else. If you must hold one of the pieces of wood being nailed together, be sure your hand is at least 1 ft from the shooting tip of the gun

I have heard and understood the briefings on how to use the tools required for this activity. I have heard and understood the methods we use to do this activity

Date _____

_____ Instructor Name _____ Signature

_____ Name _____ Signature